

REMARKS

By this reply, claims 54, 76, 107, and 136 have been amended. Accordingly, claims 54-136 remain pending in this application. No new matter has been added by this reply.

I. The Drawings Objection

On page 2 of the Office Action, the drawings were objected to for allegedly failing to show a claimed feature. Specifically, page 2 of the Office Action asserts that “the deformable closure member opening to ‘close’ the port, as set forth in claims 54, 76, and 107 must be shown.” Contrary to the Office Action, no “deformable closure member” is recited in independent claims 54, 76, or 107. Each of independent claims 54, 76, and 107 does recite, *inter alia*, “at least one **non-deformable** closure member designed to **open and close** at least one port in said valve.” Support for this claimed feature can be found in FIG. 4 of Applicant’s originally-filed drawings, as explained in lines 29-31 on page 17 of Applicant’s originally-filed specification. Thus, contrary to the Office Action’s objection, the drawings do show the features recited in independent claims 54, 76, and 107. Applicant therefore respectfully requests reconsideration and withdrawal of the drawing objection.

II. The Rejection Under 35 U.S.C. § 112, First Paragraph

On page 3 of the Office Action, independent claims 54, 76, and 107 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. By this reply, independent claims 54, 76, and 107 have each been amended to recite, *inter alia*, “wherein the elastic element exerts a pressure on the diaphragm which brings the cap to act against the needle, thereby causing the at least

one non-deformable closure member **to open** the at least one port.” Applicant submits that this amendment is consistent with the Examiner’s suggestion on page 3 of the Office Action. Applicant also submit that this amendment clarifies the features being claimed, and thus, amended independent claims 54, 76, and 107 comply with the enablement requirement. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this claim rejection.

III. The Rejection Under 35 U.S.C. § 103(a)

On page 3 of the Office Action, claims 54-136 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent No. 6,601,625 B2 to Rheinhardt (“Rheinhardt”), U.S. Patent No. 1,993,814 to Vaughn (“Vaughn”), and U.S. Patent No. 6,553,010 B1 to Alonso et al. (“Alonso”). Applicant respectfully requests reconsideration and withdrawal of this claim rejection. Rheinhardt, Vaughn, and Alonso, whether taken alone or in combination, fail to establish the required *prima facie* case of obviousness needed to support the rejection.

Of claims 54-136, claims 54, 76, 107, and 133-136 are independent. Of the independent claims, independent claims 54, 76, 107, and 136 have been amended. Amended independent claim 54 recites, *inter alia*, “bringing the inner volume of said tyre into communication with said tank when the pressure of the inner volume of said tyre is lower than said operating pressure, by means of at least one mechanical valve . . . said valve is maintained in a closed position following a reduction in the inner tyre pressure due to a temperature reduction within said range . . . and stopping the communication between said inner volume and the tank when said tyre pressure is substantially equal to said operating pressure.”

Rheinhardt teaches a wheel with a compressed air tank apparatus 1, including a high pressure reservoir 30 mounted on a rim 5 over which a tire 10 having an air chamber 10A is mounted. See Rheinhardt at column 2, lines 21-26. As shown in FIG. 1, Rheinhardt also teaches that apparatus 1 includes an air inlet valve 20, an air regulator valve 40, a pressure activated air release valve 50, and a pressure activated air release valve 60. See id. at column 2, lines 33-37. Rheinhardt teaches that air regulator valve 40 includes a mechanical activation means that when activated, transfers air from high pressure reservoir 30 into chamber 10A of tire 10 when the pressure in air chamber 10A drops below a **pre-selected pressure activation threshold**. See id. at column 2, lines 56-62. While Rheinhardt does not teach valve features with specificity, Rheinhardt does teach that specific valves or valve parts are chosen to **withstand changes in temperature**. See id. at column 3, lines 41-46.

Page 4 of the Office Action asserts that “Rheinhardt also discloses that the valve 40 may function (i.e. open and close) in response to changes in air temperature.” Applicant respectfully disagrees with this assertion. The Office Action’s assertion is not supported by Rheinhardt. Rather, as noted above, Rheinhardt teaches that valve 40 **withstands changes in temperature**, not that valve 40 functions **in response to changes in air temperature** as asserted by the Office Action. Thus, it appears the claim rejection is based on a mischaracterization of Rheinhardt.

Looking past the mischaracterization for now, it is evident that Rheinhardt suffers from a variety of other deficiencies. Those deficiencies are acknowledged on pages 4 and 5 of the Office Action. In an attempt to remedy the deficiencies of Rheinhardt, the Office Action cites Vaughn. Vaughn teaches a thermostatic valve including an

expansible and collapsible thermostatic bellows 7, where a rise in temperature will cause bellows 7 to expand and a fall in temperature will cause bellows 7 to contract. See Vaughn at page 1, column 2, lines 1 and 19-21; and FIGS. 1 and 3. Vaughn teaches that inflation and deflation of bellows 7 closes and opens the valve. See id. at page 2, column 1, lines 22-38; and FIGS. 1 and 3. Page 4 of the Office Action asserts that “it would have been obvious . . . to provide the tire inflation system of Rheinhardt with the temperature responsive valve of Vaughn as a substitute equivalent structure.” Applicant respectfully disagrees with this assertion for reasons outline below.

Rheinhardt teaches that air regulator valve 40 includes a mechanical activation means that when activated, transfers air from high pressure reservoir 30 into chamber 10A of tire 10 when the pressure in air chamber 10A drops below a **pre-selected pressure activation threshold**. See id. at column 2, lines 56-62. Substituting air regulator valve 40 of Rheinhardt with the thermostatic valve with bellows 7 of Vaughn, when the thermostatic valve of Vaughn opens and closes based on temperature **and not air pressure**, renders Rheinhardt unsuitable for its intended purpose of transferring air based on an air pressure differential, and/or changes the principle of operation of Rheinhardt from a pressure triggered valve to a temperature triggered valve.

Since the Office Action’s proposed modification of Rheinhardt with Vaughn relies on a mischaracterization of Rheinhardt, and would render Rheinhardt unsuitable for its intended purpose and/or change the principle operation of Rheinhardt, the proposed modification fails to establish the requisite *prima facie* case of obviousness needed to support the rejection of amended independent claim 54. See MPEP § 2143.01(V) and (VI).

Furthermore, the resulting apparatus, produced by modifying Rheinhardt with Vaughn in the manner proposed by the Office Action, would not teach or suggest “bringing the inner volume of said tyre into communication with said tank when the **pressure** of the inner volume of said tyre is lower than said operating pressure, by means of at least one mechanical valve . . . said valve is maintained in a closed position following a reduction in the inner tyre **pressure** due to a temperature reduction within said range . . . and stopping the communication between said inner volume and the tank when said tyre **pressure** is substantially equal to said operating pressure,” as recited in amended independent claim 54, since the valve in Vaughn operates based on temperature, not pressure. For at least this additional reason, the Office Action’s proposed combination of Rheinhardt and Vaughn is deficient with respect to amended independent claim 54.

On page 5 of the Office Action, it is asserted that Alonso remedies deficiencies of Rheinhardt and Vaughn. Specifically, page 5 of the Office Action asserts that it would have been obvious to use a spring material taught by Alonso. Even if, *arguendo*, the Office Action’s characterization of the teaching of Alonso is accurate, and Applicant in no way concedes that it is, Alonso still fails to remedy the deficiencies of Rheinhardt and Vaughn outlined above. Accordingly, a *prima facie* case of obviousness has not and cannot be established based on Rheinhardt, Vaughn, and Alonso, whether the references are taken alone or in combination. Accordingly, Applicant submits that amended independent claim 54 is allowable over Rheinhardt, Vaughn, and Alonso.

Independent claims 76, 107, and 133-136, while of different scope, each recite **pressure-related** features similar to those recited in amended independent claim 54.

For example, amended independent claim 76 recites, *inter alia*, “at least one non-deformable closure member designed to open and close at least one port in said valve to bring said tank into communication with said tyre **when pressure in said tyre is lower than said operating pressure** . . . the valve is maintained in a closed position following a reduction in the **inner tyre pressure** due to a temperature reduction within said range.” Amended independent claim 107 recites, *inter alia*, “at least one elastic element operatively associated with at least one non-deformable closure member designed to open and close at least one port in said valve to bring said tank into communication with said tyre **when pressure in said tyre is lower than an operating pressure** . . . the valve is maintained in a closed position following a reduction in the **inner tyre pressure**.” Independent claim 133 recites, *inter alia*, “bringing the inner volume of said tyre into communication with said tank **when the pressure of the inner volume of said tyre is lower than said operating pressure**, by means of at least one mechanical valve opening . . . said valve is maintained in a closed position following a reduction in the **inner tyre pressure** due to a temperature reduction within said range; and stopping the communication between said inner volume and the tank **when said tyre pressure is substantially equal to said operating pressure**, wherein a ratio between said **operating pressure of the tyre and said first pressure** in said tank is about 0.1 to about 0.6.” Independent claim 134 recites, *inter alia*, “bringing the inner volume of said tyre into communication with said tank **when the pressure of the inner volume of said tyre is lower than said operating pressure**, by means of at least one mechanical valve opening . . . said valve is maintained in a closed position following a reduction in the **inner tyre pressure** due to a temperature reduction within said range;

and stopping the communication between said inner volume and the tank **when said tyre pressure is substantially equal to said operating pressure**, wherein said step of bringing the inner volume of said tyre into communication with said tank takes place **when the pressure of the inner volume of said tyre is lower than said operating pressure** by at least 5%.” Independent claim 135 recites, *inter alia*, “bringing the inner volume of said tyre into communication with said tank **when the pressure of the inner volume of said tyre is lower than said operating pressure**, by means of at least one mechanical valve opening . . . said valve is maintained in a closed position following a reduction in the **inner tyre pressure** . . . and stopping the communication between said inner volume and the tank **when said tyre pressure is substantially equal to said operating pressure**.” And amended independent claim 136 recites, *inter alia*, “at least one movable non-deformable closure member designed to open and close at least one port in said valve to bring said tank into communication with said tyre **when pressure in said tyre is lower than said operating pressure** . . . the valve is maintained in a closed position following a reduction in the **inner tyre pressure** due to a temperature reduction within said range.” For at least these reasons, Applicant submits that independent claims 76, 107, and 133-136 are allowable over Rheinhardt, Vaughn, and Alonso, as is amended independent claim 54.

Claims 55-75, 77-106, and 108-132 each depend from one of amended independent claims 54, 76, and 107, and thus, include the features recited in amended independent claims 54, 76, and 107. Claims 55-75, 77-106, and 108-132 are therefore allowable for the reasons that amended independent claims 54, 76, and 107 are allowable.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application, and the timely allowance of the pending claims.

The Office Action contains characterizations of the claims and the related art with which Applicant does not agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

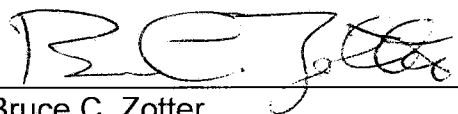
Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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